



Public Notice

U.S. Army Corps of Engineers, Norfolk District

October 13, 2005

CENAO-TS-REG

The Norfolk District Regulatory Branch Announces the Interim Adoption and Implementation of a Stream Attribute Assessment Methodology (SAAM)

The Norfolk District Regulatory Branch has been working for over three years to develop a workable stream assessment methodology to use to determine appropriate mitigation for permits authorizing impacts to streams.

In April 2005, teams composed of consultants and staff from the Virginia Department of Environmental Quality, the U.S. Fish and Wildlife Service, the Virginia Department of Transportation and Norfolk District Regulatory Branch were formed to field test a draft version of the SAAM on a range of streams within the Piedmont Physiographic Region. We very much appreciate the time and effort of all those who participated in testing the SAAM.

Attached to this public notice is our Statement of Findings addressing how comments were considered, a description of how we have modified the SAAM, a copy of the revised SAAM forms, and the instructions manual. The SAAM will be used in all wadeable streams, intermittent streams and small perennial streams. Ephemeral streams (e.g., those streams that flow only during rainfall events and lack a groundwater input or component) are excluded from use of the SAAM. Generally, mitigation for impacts to ephemeral streams and larger perennial streams will be determined on a case-by-case basis. The SAAM will only be used when the Corps requires mitigation for stream impacts.

We have made the following changes to the SAAM:

- modified the incision variable to account for aggrading streams;
- eliminated the water quality and embeddedness variables;
- reduced the number of choices within the condition categories of the variables; and
- modified the descriptors to more clearly distinguish the categories.

We believe these changes have helped us achieve our goals of developing a methodology that is relatively simple to use, produces results that can be replicated among regulators and the consultant community, enhances the predictability of our regulatory program, and protects the aquatic environment. However, in implementing the SAAM, we will continue to maintain flexibility to address unusual situations, insure our decisions are fair and reasonable, and require mitigation that is commensurate with the extent of the impacts.

Based on these changes, we are implementing the SAAM on an interim basis in the Piedmont Physiographic Region (see attached map). The effective date of the SAAM is November 15, 2005. We intend to reevaluate the SAAM within a year of implementation to address staff and public comments. We have attached a list of questions and answers on the SAAM to aid everyone's understanding of how the SAAM will be implemented. If you have additional questions, you may email them to Bruce Williams at the address below and we will post the answers on our web site. We are also adapting the SAAM for the coastal plain and mountain physiographic regions and will distribute those forms for use during the interim period.

Prior to the implementation date, we will provide training to our staff. We have also scheduled a briefing for interested consultants and the public for November 2, 2005 at the James City County Community Center from 9:00-12:00. At this meeting, we will review the changes, provide you with an overview of how the SAAM is applied to both an impact stream and candidate mitigation streams, and answer questions. If you are interested in attending the briefing, please call Bruce Williams at 757.201.7418 or email him at bruce.f.williams@usace.army.mil so we can insure we have adequate facilities and a sufficient number of handouts.

J. Robert Hume, III
Chief, Regulatory Branch

SAAM Questions and Answers

Question 1: Why aren't the Corps and DEQ implementing a methodology together?

Answer 1: Over the past three years, the Corps and DEQ have worked together to develop a stream methodology. While the two agencies share common goals, to date we have been unable to form a consensus. We have decided to implement the SAAM on an interim basis to enhance the predictability of our program. We will within a year reevaluate the SAAM to address staff and public comments. We will also continue to work with DEQ during that period toward the goal of developing a stream assessment methodology both agencies can support.

Question 2: How will implementation of the SAAM affect permit applications submitted prior to November 15, 2005?

Answer 2: Applicants with applications received prior to November 15, 2005 will have the option using the SAAM to determine the required mitigation. Applications withdrawn before November 15, 2005 and then reactivated after November 15, 2005 will be required to use the SAAM to determine the required mitigation.

Question 3: How will implementation of the SAAM affect mitigation banks that are in the process of being developed and reviewed?

Answer 3: Sponsors of proposed mitigation banks that have not submitted a draft mitigation banking instrument to the Mitigation Bank Review Team by the date of this public notice will be required to use the SAAM. Those sponsors who have submitted draft a mitigation banking instrument will have the option of using the SAAM.

Question 4: How will implementation of the SAAM affect previously issued Corps permits and previously approved mitigation banks?

Answer 4: The SAAM will not affect previously issued permits or previously approved mitigation banks.

Question 5: How will the SAAM be used to determine the required mitigation?

Answer 5: We envision the following steps:

Step 1. Run SAAM Form 1 to determine impact Reach Condition Index (RCI) of the impact stream.

Step 2. Locate a candidate mitigation stream and run Form 1 and obtain pre-condition RCI on the mitigation stream.

Step 3. Determine which variables have improvement potential prior to any design or plan development. For example, livestock pasture occurs on both banks of the mitigation stream (Poor category) and the mitigation goal is to replant a 100 foot wide forested riparian community on both banks having > 60% canopy cover and multiple forest layers (Optimal category). Use this information to develop a conceptual mitigation plan.

Step 4. The following is an example of sample calculations to determine the amount of mitigation stream length necessary using the Prince William stream as the impact stream (RCI = 5.59) and Cheswick Park as the mitigation stream (existing RCI = 2.32):

STEP 1: Cheswick Park Stream Pre-Mitigation condition				
Variable		Condition	Score	CI
1	Incision	BHR 2.1		0.47
2	Riparian	Mature Forested	1.6/2	0.8
3	Erosion	480'/800' = 60% Eroding	6/20	0.3
4	Habitat	400' @ <10%	1	0.1
5	Sediment	400' @ <20%	1	0.1
6	Chan Alt	400' @>20 yrs old	6	0.55
			RCI =	2.32

STEP 2: Proposed Mitigation Concept Plan Evaluation				
Variable		Proposed Restoration Work	Score	CI
1	Incision	No change.	BHR 2.1	0.47
2	Riparian	No change.	8	0.8
3	Erosion	Restore bank erosion with bioengineering techniques.	16/20	0.8
4	Habitat	Increase habitat to > 50% of bottom	9	0.8
5	Sediment	Assume improvement based on work	9	0.8
6	Chan Alt	No change.	6	0.55
			RCI =	4.22

STEP 3: Concept Plan Mitigation Lift Calculation	
Cheswick Park Stream Pre-Mitigation RCI	2.32
Cheswick Park Stream Proposed Mitigation Concept Plan RCI	4.22
Mitigation Lift RCI (4.22-2.32)	1.9
Mitigation Liability Pr William Park stream RCI = 5.59	5.59
Linear Feet Required at Cheswick = (5.59/1.9)*400lf Impact Stream	1177

Existing RCI = 2.32
 Predicted post-mitigation = 4.22
 Net Change RCI = 1.9

$(\text{RCI Mitigation liability} / \text{Net Change Mitigation RCI}) * \text{If of impact} = (5.59 / 1.9) * 400$ If impact stream = 1,177 linear feet of channel compensation at the Cheswick site for 400 feet of Prince William stream impact.

Step 5. Submit the concept plan to the agencies for review and approval, preferably at the pre-application stage.

Step 6. Develop stream restoration plan.

Step 7. Agencies review the plan, determine if the commitments are reflected in the plan, and if its features are properly designed and located. If not, applicant will modify the plan, or less credit will be provided.

Step 8. Agree on final plan and credit.

Step 9. Build it.

Step 10. Monitor.

We intend that steps 1-5 will be informal and require very little time or expense. Once a site and scope of work are agreed to, steps 6-10 would be accomplished. If the plan does not produce what was predicted in step 5, less credit will be granted.

The project manager and the applicant would discuss the degree of improvement, based on the conceptual mitigation plan, and arrive at an agreed upon condition index for that particular variable. Detailed project plans would not be developed until decisions and assurances about final crediting were agreed too based on the conceptual mitigation plan.

Question 6: How will the SAAM determine the required mitigation when the proposed mitigation is preservation only?

Answer 6: The SAAM will be used to determine the RCI of the proposed impact stream. For mitigation consisting of stream and riparian buffer preservation only, we will use a 5:1 ratio of the preservation stream's RCI as determined by the SAAM. The calculation is as follows:

$$[(\text{Impact Stream RCI} / \text{Preservation Stream RCI}) * \text{Preservation Ratio}] * \text{Impact Stream Length} = \text{Preservation Stream Length}$$

Using the example of 400 linear feet of impact to the Prince William stream (RCI = 5.59) and a preservation stream RCI = 3.2, the amount of preservation stream necessary is:

$$[(5.59 / 3.2) * 5] * 400' = 3,494 \text{ linear feet of preservation stream}$$

As one can see, the preservation ratio will increase or decrease, depending on the RCI of the impact stream and the RCI of the preservation stream. If the RCIs between the impact stream and the preservation stream are equal, a straight 5:1 ratio would apply:

$$[(3.2/3.2)*5]*400' = 2,000 \text{ linear feet of preservation stream}$$

In those cases where an applicant proposes to preserve the entire headwater watershed, the aforementioned preservation only ratio will be reduced to 3:1.

In those cases where an applicant proposes to preserve the entire watershed, including all headwaters, the aforementioned preservation only ratio may be reduced to 3:1.

Question 7: Is there an RCI below which a stream is not an appropriate candidate for preservation-only mitigation?

Answer 7: If the RCI is below 3 for the candidate preservation stream, in all of but exceptional cases, it will not be considered as acceptable for preservation-only mitigation.

Question 8: Will credit be given for riparian buffers that exceed 100 feet on either bank and is there a maximum width?

Answer 8: Mitigation credit for both riparian restoration and preservation will be given for riparian buffers out to 200 feet. This means the Riparian Area Condition Index could potentially score a maximum CI of 2.0 instead of 1.0.

Question 9: How will stream mitigation in separate locations be considered?

Answer 9: In most cases, the stream mitigation should be continuous, on both sides of the stream and only be separated by road crossings, power lines, etc.

Question 10: What are the differences between the various SAAM forms?

Answer 10: There have been two types of stream forms in use in Norfolk District. The first, often referred to as Stream Form 1, or the Interim Stream Attributes Checklist is a subjective analysis form not related to the SAAM. This will continue to be used primarily for Trust Fund estimates in locations where the SAAM does not apply.

The new version of the SAAM includes the following forms:

SAAM Form 1. This is the field form. There is an electronic version in Excel that automatically calculates the CIs and RCIs when the field data are entered into the automated form.

SAAM Form 2: This is the form used to evaluate and score Mitigation Proposals. This form provides the RCI of the stream after mitigation measures are taken.

SAAM Form 3: The Mitigation Calculation Form. This form provides the user with the required linear feet of mitigation after data is input from forms 1 & 2.